

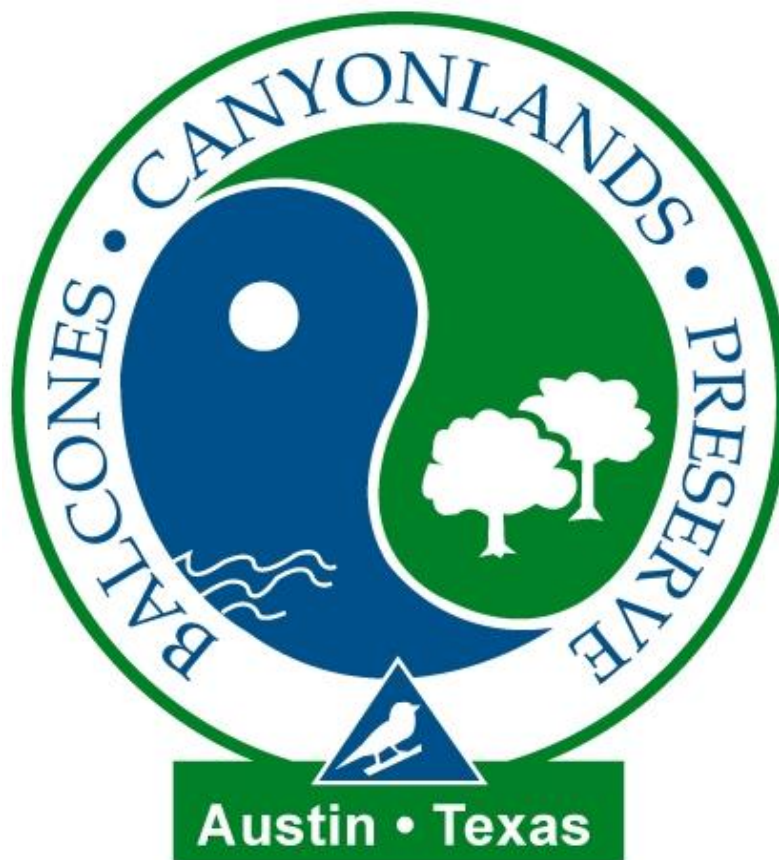
Balcones Canyonlands Conservation Plan

2013 Annual Report

(October 1, 2012 – September 30, 2013)

USFWS Regional Section 10(a)(1)(B) Permit No. TE-788841-2

Travis County – City of Austin



Submitted by

The Balcones Canyonlands Conservation Plan

Coordinating Committee

January 2014

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1. **Abbott, Kendra K., S. Robinson and J. LaManna.** *A Test of the Relative Abundance, Diversity and Distribution of Ants at the Wild Basin/Vireo Preserve in Relation to Habitat Manipulation for the Black-capped Vireo (Vireo atricapilla).* St. Edwards University. 2013.
2. **Atkins.** *Spring 2013 Survey Report Golden-cheeked Warbler (Setophaga chrysoparia) for LCRA's Wheless preserve Travis County, Texas.* Prepared for Lower Colorado River Authority. 2013
3. **Bendik, Nathan F.** *Jollyville Plateau Salamander Interim Report, 2013, for Balcones Canyonlands Preserve.* City of Austin. Watershed Protection. 2013.
4. **Glick, Roger.** *Stormwater Monitoring in Upper Bull Creek and Flint Ridge Cave.* City of Austin Watershed Protection Department. 2013.
5. **Harp, Cyrus A.** *Aboveground Spatial Variation of Arthropod Biomass and Diversity Along Gradients of Plant Biomass and Net Primary Productivity in Central Texas Hill Country Forests.* Department of Integrative Biology, University of California, Berkely. 2013
6. **Hauser, Charles.** *Metagenomics of Glen Rose Soil Microbial Systems and their Role(s) in Carbon Cycling and Native Plant Restoration at the Black-capped Vireo Research Area and Wild Basin Wilderness Preserve.* Bioinformatics Program, St. Edward's University. 2013.
7. **Hauwert, Nico M.** *Hydrogeologic Study of Spanish Wells Cave.* City of Austin WPD. 2013.
8. **Haverland, Matthew.** *Examining the Effects of Urbanization on Mammalian occupancy in the Texas Hill Country.* Texas State University Department of Biology. 2013.
9. **Hutchinson, Darrell.** *Summary of 2013 Golden-cheeked Warbler Surveys at Wild Basin Wilderness Preserve.* 2013.
10. **Johns, David A.** *Summary of Tracing for Four Points in and Near the Balcones Canyonlands Sam Hamilton and Bull Creek Preserves.* City of Austin WPD. 2013.
11. **Johnson, David R., M. Satcher and L. Kelley.** *Vegetation Survey at Wild Basin Wilderness Preserve and Adjacent BCP Vireo Preserve.* St. Edward's University. 2013.
12. **Lebrun, Edward G.** *Distribution and Prevalence of Native Fire Ants in the Balcones Canyonlands Preserve.* Brackenridge Field laboratory Section of Integrative Biology, University of Texas at Austin. 2013.
13. **Leeper, Jennifer.** *Spring 2013 Survey Report Golden-cheeked Warbler (Setophaga chrysoparia) Westcave Preserve Travis County, Texas.* Lower Colorado River Authority. 2013.
14. **Perkins, Thais.** *Draft Jollyville Transmission Main Environmental Monitoring report #5.* City of Austin Watershed Protection Department. 2013.
15. **Pruett, Hannah, H. Mathewson, and M. Morrison.** *Analysis of the Golden-cheeked Warbler in relation to Construction Activity Along Highway 71.* Texas A&M University, Institute of Renewable Natural Resources. 2013.
16. **Quinn, William J. and Devin K. Gillen.** *The occurrence of Browsing by White-tailed deer (Odocoileus virginianus) on Texas Red Oak (Quercus buckleyi) at Wild Basin preserve.* St Edward's University. 2013.
17. **Quinn, William J., J. Pierce and A. Brown.** *The Effect of Aspect on the Abundance of Texas Madrone (Arbutus xalapensis) at Wild Basin.* St Edward's University. 2013.
18. **Senison, Jeff and Jay Banner.** *Geochemical Indicators of Urbanization in the Bull Creek Watershed.* The University of Texas at Austin, Jackson School of Geosciences. 2013.
19. **Wagner, Staryn, A. Richter and M. Scoggins.** *Live Staking Methodology Review.* City of Austin Watershed Protection Department. 2013.

Background

On May 2, 1996, the City of Austin and Travis County were jointly issued a U.S. Fish and Wildlife Service (USFWS) regional permit referred to as the Balcones Canyonlands Conservation Plan (BCCP). This permit allows incidental “take” of eight locally occurring endangered species in compliance with Section 10(a)(1)(B) of the Endangered Species Act (USFWS, 1996a). The thirty-year permit covers approximately 561,000 acres in western Travis County identified in the Habitat Conservation Plan and Final Environmental Impact Statement (HCP) (USFWS, 1996b). The permit also covers incidental take of 27 species of concern should any become listed as threatened or endangered during the life of the permit (Table 1).

Permit Requirements

The City of Austin and Travis County (the Permit Holders) are required to assemble and manage a minimum of 30,428 acres of suitable habitat for the golden-cheeked warbler and the black-capped vireo. Additionally, Permit Holders are required to protect and manage populations of canyon mock orange and Texabama croton. The Permit Holders are also required to acquire, manage, and/or ensure protection for 35 karst features which support populations of six species of endangered karst invertebrates. An additional 27 karst features are known to harbor 25 karst-specific species of concern. This system of managed and protected habitats is known as the Balcones Canyonlands Preserve (BCP). The locations of habitat areas and specific karst features proposed for protection are delineated in the HCP (USFWS, 1996b).

Agencies or organizations which enter into formal agreements with the Permit Holders in order to manage designated preserve lands in accordance with the BCCP are considered Managing Partners. At this time, the sole BCP Managing Partner is the Lower Colorado River Authority (LCRA), which manages 2,707 acres as a portion of the preserve system. As a Managing Partner, LCRA may mitigate for capital improvement and infrastructure development projects through the mitigation credit system established by the BCCP. The Nature Conservancy of Texas (TNCTX) and the Travis Audubon Society (TAS) also manage lands for public and environmental benefit within the BCP. These organizations are not considered Managing Partners because no formal agreements with the Permit Holders have been finalized. The Permit Holders have initiated discussions with other municipalities and stakeholders within the permit area about joining the effort to achieve the goals of the BCCP through Managing Partner Agreements. The Permit

Holders hope to forge new agreements securing protection for additional lands within the BCP.

Table 1. Species Covered by the Balcones Canyonlands Conservation Plan.

Common name	Scientific name	Status
Black-capped vireo	<i>Vireo atricapilla</i>	Endangered
Golden-cheeked warbler*	<i>Setophaga chrysoparia</i>	Endangered
Tooth Cave pseudoscorpion	<i>Tartarocreagris texana</i>	Endangered
Tooth Cave spider	<i>Neoleptoneta myopica</i>	Endangered
Bee Creek harvestman	<i>Texella reddelli</i>	Endangered
Bone Cave harvestman	<i>Texella reyesi</i>	Endangered
Tooth Cave ground beetle	<i>Rhadine persephone</i>	Endangered
Kretschmarr Cave mold beetle	<i>Texamaurops reddelli</i>	Endangered
Canyon mock-orange	<i>Philadelphus ernestii</i>	Species of Concern
Texabama croton	<i>Croton alabamensis</i>	Species of Concern
Flatworm	<i>Sphalloplana mohri</i>	Species of Concern
Ostracod	<i>Candona</i> sp. nr. <i>stagnalis</i>	Species of Concern
Isopod	<i>Caecidotea reddelli</i>	Species of Concern
Isopod	<i>Trichoniscinae</i> n. s.	Species of Concern
Isopod	<i>Miktoniscus</i> n. s.	Species of Concern
Spider	<i>Cicurina wartoni</i>	Species of Concern
Spider	<i>Cicurina ellioti</i>	Species of Concern
Spider	<i>Cicurina bandida</i>	Species of Concern
Spider	<i>Cicurina reddelli</i>	Species of Concern
Spider	<i>Cicurina reyesi</i>	Species of Concern
Spider	<i>Cicurina cueva</i>	Species of Concern
Spider	<i>Cicurina travisae</i>	Species of Concern
Spider	<i>Neoleptoneta cocinna</i>	Species of Concern
Spider	<i>Neoleptoneta devia</i>	Species of Concern
Spider	<i>Eidmannella reclusa</i>	Species of Concern
Pseudoscorpion	<i>Aphrastochthonius</i> n. s.	Species of Concern
Pseudoscorpion	<i>Tartarocreagris reddelli</i>	Species of Concern
Pseudoscorpion	<i>Tartarocreagris intermedia</i>	Species of Concern
Pseudoscorpion	<i>Tartarocreagris</i> n. s. 3	Species of Concern
Harvestman	<i>Texella spinoperca</i>	Species of Concern
New Comanche Trail Cave Harvestman	<i>Texella comanche</i>	Species of Concern
Millipede	<i>Speodesmus</i> n. s.	Species of Concern
Ground beetle	<i>Rhadine s. subterranea</i>	Species of Concern
Ground beetle	<i>Rhadine s. mitchelli</i>	Species of Concern
Ground beetle	<i>Rhadine austinica</i>	Species of Concern

*Scientific reclassification in 2011 from *Dendroica chrysoparia* to *Setophaga chrysoparia*

A number of private landowners also manage habitat within the proposed preserve boundaries, often as required under individually issued Section 10(a) permits. These landowners are responsible for reporting in accordance with the terms and conditions of their individual permits directly to the USFWS and their reports are not incorporated into this Annual Report. The Permit Holders cooperate with these entities and private landowners to address species and land management concerns common to all BCP properties.

The City of Austin operates the BCCP Capital Improvement and Infrastructure Development Mitigation Process, and Travis County administers the BCCP Public Participation Process that addresses the mitigation needs of agencies and landowners under the terms of the Permit. The BCCP provides a voluntary, streamlined alternative for agencies and landowners seeking to comply with the Endangered Species Act (the Act). Those entities participating through the BCCP have met their obligations under the Act and may proceed with development under the terms of their respective Participation Agreements. Those agencies and landowners choosing not to participate may comply with the Endangered Species Act by obtaining an individual 10(a) permit from the USFWS.

The Permit further requires that the Permit Holders submit an annual report which provides the following:

- an annual summary of development activities within the Permit area
- an annual list of tracts for which Participation Certificates were issued
- the amount of funds collected through Participation Certificate and USFWS directed mitigation fees
- the amount of funds expended for land acquisition
- the amount of funds expended for BCP operations and maintenance
- an updated map of BCP lands
- a summary of public use and habitat management activities within the BCP
- copies of all research and investigation reports prepared within the last year.

Development Activity within the Permit Area

The City of Austin development activity report for Fiscal Year 2013 (FY13) details a compilation of Development Permits issued within the City's jurisdiction of the Permit area and can be found in Appendix A. A summary of development permits issued by the Travis County Permitting office within the Permit area in FY13 is included within Appendix B.

Mitigation Credit Balance

The City of Austin's Balcones Canyonlands Preserve staff administers the Capital Improvement and Infrastructure Development Project mitigation credit system on behalf of the BCCP Coordinating Committee. The mitigation needs of the Permit Holders and the Managing Partner for these projects are provided under the terms of the regional Permit. Mitigation credits are issued at a rate equal to the number of acres within the Preserve system managed under the terms and conditions of the Permit and the HCP/FEIS (U. S. Department of the Interior, Fish and Wildlife Service, 1996b). BCP acreage that was originally mitigation under the BCCP Alternative Determination Process, or another Section 10(a) or Section 7 permit, is not included in this mitigation bank acreage total. Capital improvement and infrastructure development mitigation needs are subtracted from this accumulated "bank" of credits at a rate of one acre of credit per acre of habitat impact; regardless of habitat zone (Table 2).

Table 2. Infrastructure Projects Mitigated Through the Use of Mitigation Credits During FY13 by Participating Agency.

City of Austin	
Starting City of Austin Balance	11,589.84 acres
New preserve additions (credits) –	0
AWU – Anderson Mill elevated storage tank improvements	(0.4)
AWU – West Bank and Los Altos lift station rehab	(0.2)
AE – Flintrock Tie	(0.2)
Remaining Mitigation Credits	11,589.04 acres
Travis County	
Starting Travis County Balance	4722.791 acres
New preserve additions (credits)	87.2 acres
Bee Creek Road	(6.2)
Flintrock Road Expansion	(0.2)
Remaining Mitigation Credits	4,803.591 acres
Lower Colorado River Authority (LCRA)	
Starting LCRA Balance	2480.9 acres
New preserve additions (credits) –	0
Credits used	0
Remaining Mitigation Credits	2480.9 acres

Participation Certificate Activity

Travis County's Natural Resources Department administers the BCCP Public Participation Process on behalf of the BCCP Coordinating Committee and issues Participation Certificates for cooperating landowners within the Permit area. Descriptions of participation categories are defined in the interlocal agreement which is entitled "Interlocal Cooperation Agreement between Travis County and the City of Austin Implementing the Balcones Canyonlands Conservation Plan Shared Vision" (City of Austin and Travis County, 1995). As required by the terms of the regional Permit, copies of each Participation Certificate and Habitat Determination map are provided to USFWS Austin Ecological Services office. During FY13, 16 Participation Certificates were issued as follows: six for commercial use, six for single family residences, three for subdivisions, and one school (Table 3).

Table 3. FY13 Projects Mitigated Through the Purchase of Participation Certificates.

Application #	Date	Name	Category	Amount Paid
#0699	10/30/2012	Redbird Investors, LTD.	residential	\$825.00
#0701	10/30/2012	Redbird Invest., LTD.	subdivision	\$275.00
#0693	11/26/2012	Riata Corporate Park	commercial	\$46,475.00
#0704	11/28/2012	Andrew R. Price	commercial	\$50,050.00
#0670	12/13/2012	T&E Properties, LLC (Belmont Village, LP)	commercial	\$36,050.00
#0661B	1/7/2013	Mark Collins Builders, Inc.	subdivision	\$16,500.00
#0706	1/14/2013	Mark Leach and Camille Tucker	residential	\$2,000.00
#0703	1/22/2013	Madrone Apartments LLC	commercial	\$178,750.00
#0709	1/24/2013	Larry Peel	residential	\$2,000.00
#0707	1/30/2013	Lake Travis ISD	school	\$0.00
#0663	2/1/2013	Grant Woolf	residential	\$2,000.00
#0692	4/19/2013	The Mason Trust	residential	\$2,000.00
#0711	5/10/2013	Apple Inc.	commercial	\$38,700.00
#0700	5/29/2013	Redbird Investors, LTD.	commercial	\$1,650.00
#0717	7/8/2013	Nicholas Atkinson	residential	\$2,000.00
#0722	7/29/2013	Sweetwater Ranch, Village F-2	subdivision	\$1,925.00

Funds Collected through Participation Certificates

A total of \$381,200 was collected through the sale of Participation Certificates in FY13 (Table 3). In FY11, there was a change in protocol for processing BCCP Participation Certificate funds. Prior to these changes, participants wrote one check for mitigation to the Balcones Canyonlands Conservation Plan. Payment was collected by the Environmental Specialist with Travis County Natural Resources and deposited into a City of Austin bank account. On a quarterly basis, these funds were disbursed equally between the two Permit holders. At the request of auditors and the Permit holders, the protocol to collect and disburse Participation Certificate funds was changed in February of 2011 starting with BCCP #0654. The new protocol requires participants to issue two checks in equal amounts (50/50) to “BCCP-City of Austin” and “BCCP-Travis County.” The checks are delivered to each agency for separate processing. These changes allowed each Permit Holder to have faster access to participation funds and allowed each agency to process funds exclusively through their own financial departments.

Funds Collected through Tax Benefit Financing

Travis County’s Tax Benefit Financing Plan is a funding mechanism outlined in the “Interlocal Cooperation Agreement between Travis County and the City of Austin implementing the Balcones Canyonlands Conservation Plan Shared Vision” (City of Austin and Travis County, 1995). It is the method Travis County agreed to use for funding land acquisition and management. In FY13, Travis County’s Tax Benefit Financing Plan generated \$10,927,333 for Travis County’s land acquisition and management projects.

Funds Expended for Land Acquisition

The Permit Holders received \$60,584,037 in federal grant funds from 1997 to 2010 through the USFWS Section 6 HCP Land Acquisition Assistance Program. With the required match, a total of \$81,222,130 was spent on grant-funded BCP Preserve Acquisition, as indicated in Table 4.

Table 4. USFWS HCP Land Acquisition Grants Received by the Permit Holders, 1997-2013.

Year	Federal Grant Funds	Minimum Local Match *	Total Grant	Local Recipient
1997	\$1,000,000	\$333,333	\$1,333,333	City of Austin
1998	\$2,000,000	\$666,667	\$2,666,666	Travis County
1999	\$1,500,000	\$500,000	\$2,000,000	Travis County
2000	\$4,140,000	\$1,380,000	\$5,520,000	Travis County
2001	\$14,362,500	\$4,787,500	\$19,150,000	City of Austin, Travis County
2002	\$10,000,000	\$3,333,333	\$13,333,333	Travis County
2003	\$4,993,794	\$1,664,598	\$6,658,392	Travis County
2004	\$3,375,000	\$1,125,000	\$4,500,000	Travis County
2005	\$6,890,000	\$2,296,667	\$9,186,667	Travis County
2007	\$5,742,500	\$1,914,167	\$7,656,667	Travis County
2008	\$5,250,000	\$1,750,000	\$7,000,000	Travis County
2010	\$1,330,243	\$886,829	\$2,217,072	Travis County
Total	\$60,584,037	\$20,563,927	\$81,222,130	

* Minimum match does not include overmatches

Travis County continues to purchase Preserve properties using County funds without grant assistance. Fee simple purchases and alternative protection strategies such as conservation easements, donations, and deed transfers have been utilized. Use of these non-traditional measures provides opportunities to secure in-perpetuity protection for habitat lands that may not otherwise be available.

Travis County expended a total of \$8,764,862 in FY13 on non-grant land acquisition activities and secured 87.2 acres through non-grant protection strategies. The City of Austin did not expend any funds on land acquisition during FY13. At the end of FY13, Travis County managed 7,641 acres of land within the BCP, and the City of Austin owned and managed 13,600 acres of land within the BCP. For a detailed account of all BCP tracts assembled see Appendices C, D, and E. All Travis County and City of Austin FY13 BCP land acquisitions are shown by tract in Table 5.

Table 5. Travis County and City of Austin FY13 BCP Land Acquisitions.

Tract	Agency	Date Acquired	Acreage	Total Expenditures *
Lucas 61/ CTE Partners	Travis County	12/21/12	61.4	\$ 8,177,380.95
Lime Creek Unit:				
Elliot	Travis County	10/29/12	3.57	\$ 95,918.11
Lu	Travis County	11/7/12	4.54	\$ 130,713.25
Bigley (CE)	Travis County	11/20/12	8.37	\$ 122,373.15
Bitner-Massa	Travis County	1/25/13	5.25	\$ 135,761.37
Ratcliff	Travis County	8/6/13	4.06	\$ 102,715.45
	Travis County	Subtotal	87.2	\$ 8,764,862.28
	City of Austin		0	\$
		Total	87.2	\$ 8,764,862

* Total Expenditures include land and associated acquisition costs

Funds Expended for Operations and Maintenance

In FY13, the Permit Holders, LCRA, TNCTX, and the Travis Audubon Society (TAS) spent \$2,715,639 on operation and maintenance of BCP lands (Table 6).

Table 6. Annual FY11 through FY13 BCP Budgets (excluding land acquisition costs) for Permit Holders, the Managing Partner, and Cooperating Entities with Summary of Total Budgets Since Plan Inception.

BCP Partner	FY 2011	FY 2012	FY 2013	Total Budget: 1996 to Present
City of Austin	\$1,009,102	\$1,030,625	\$1,237,653	\$13,485,115
Travis County	\$1,079,598	\$971,316	\$1,341,486	\$9,593,292
LCRA	\$60,000	\$56,500	\$76,500	\$1,805,579
TNCTX	\$10,000	\$10,000	\$10,000	\$962,000
TAS	\$46,287	\$50,000	\$50,000	\$377,986
TOTALS	\$2,204,987	\$2,118,441	\$2,715,639	\$26,223,972

The City of Austin spent a total of \$1,237,653 for FY13 to fund BCP management expenditures by the Austin Water Utility's Wildland Conservation Division, Balcones Canyonlands Preserve Program. This figure understates the City's total expenditures on this program since it does not include (1) work by other staff in the Austin Water Utility Wildland Conservation Division (AWU) on program administration and support; (2) operation and maintenance expenditures by Austin Parks and Recreation Department (PARC) operations on BCP-designated parkland; or (3) capital improvement projects related to offices, and other facilities/infrastructure. The aforementioned expenditures cannot be readily determined from their program budgets.

The Travis County Natural Resources budget for the BCP Program in FY13 was \$1,341,486. This total includes Travis County General Fund expenditures, funds from Tax Benefit Financing, BCP Participation funds, and funds negotiated and received from private 10(a) holders for land managed by Travis County to support ongoing operations and maintenance of County-managed Conservation Easements. This sum does not include administrative, legal, law enforcement support or non-habitat-related operations and maintenance provided by other Travis County Departments. This sum also fails to estimate expenditures by St. Edwards University, which holds a contract to conduct educational programming and management of the County-owned Wild Basin Wilderness Preserve.

Updated Map of Lands Dedicated to the Balcones Canyonlands Preserve

With the addition of 87.2 acres to the BCP in FY13, 30,518 of the 30,428 acres of black-capped vireo and golden-cheeked warbler habitat required by the Permit have been assembled by the Permit Holders with the assistance of cooperating landowners and entities.

With the acquisition of 2 additional BCP caves in FY12, 47 of the 62 caves which are identified to be protected in the permit have been afforded some level of protection. Ten additional endangered species karst features which are not listed on the permit are also protected on BCP land. A map illustrating the current status of the Balcones Canyonlands Preserve is enclosed as Appendix E. Summaries of BCP lands sorted by macrosite and managing entity are attached as Appendices C and D, respectively.

BCP Completion Task Group Report

In mid-FY13, the BCCP Completion Task Group met to review current acquired preserve and karst feature status, plan strategy for future acquisitions, and continue discussions about what will be needed to complete the BCCP Permit requirements. No follow-up report was produced. Subcommittees were formed to review bird habitat quality, management areas, and buffers; draft potential karst substitution criteria, as allowed under Permit conditions S2 (listed species' features) and T2 (species of concern features); discuss "edge to core" area ratio calculation/analysis methods; and discuss assumptions and definitions that are open to some interpretation in the permit language (e.g. acres v. habitat, karst "protection").

Even though the minimum total acreage (30,428 acres) of Preserve has now been acquired, additional acreage will still be needed to meet the configuration requirements for the bird habitat blocks by macrosite and acquisition of additional specific karst features required in the Permit.

For background, on August 30, 2011 the BCCP Completion Task Group presented the Completion Report to Travis County Commissioner's Court. The purpose of this report was to determine the status of the BCCP and BCP as it relates to land acquisition, configuration, and USFWS 10 a permit requirements. The report was requested originally by Travis County Commissioner's Court in 2007. From 2007 to 2011, the Task Group met regularly to discuss completion of the BCCP/BCP and to create and compile data pertinent to the report. The Task Group presented the findings of the report to the BCCP Coordinating Committee (10/27/11), Scientific Advisory Committee (10/11/11), and the Citizens Advisory Committee (10/20/11).

When the 2011 report was completed, the minimum acreage for all macrosites had been acquired except for the Bull Creek macrosite; however, the higher target acreage is still recommended in several macrosites and not yet achieved and Preserve configuration continues to be an issue for Preserve Permit completion. As a condition of the Permit, preserve land should be assembled to meet an edge-to-area ratio of no greater than 20%. This condition has generally been met in all macrosites except for the Bull Creek and North Lake Austin macrosites, although this analysis is in progress. The edge-to-area ratio is a difficult aspect to define with certainty because of initial configuration design flaws when the Permit was issued, issuance of individual 10(a) permits by USFWS within the BCP Acquisition Boundary, and the lack of willing sellers. The permit holders will continue to work

toward completion of the Permit Requirements with special effort toward karst protection and acquisition of additional tracts to meet the acreage and configuration requirements.

FY 2013 Research or Investigative Reports

Research reports for activities that occurred on the BCP are included as Appendices F through L, and P1- P19. See the table of contents for a list of appendices which include the author and title of each research report.

Public Use, Habitat and Wildlife Monitoring, and Management Activities Occurring within the Balcones Canyonlands Preserve

CITY OF AUSTIN

The following section lists the wildlife and habitat monitoring, management, and public use activities on City of Austin (COA) land counted as part of the BCP. The City of Austin's BCP tracts are managed by AWU and PARD with different management responsibilities assigned to each entity (Table 7). PARD operations do not manage for Endangered Species; they perform regular maintenance such as mowing, trash pickup, and some trail management activities. AWU BCP staff provides BCP management activities

Table 7. Management Status of City of Austin BCP Properties

Tract	Primary Management Responsibility	Acreage
Upper Bull Creek Unit (Franklin, Gass, Hanks, Lanier, COA Canyon Creek plus MUD tracts, Gardens at Bull Creek, Bowman, and Sam Hamilton Memorial Reserve (former WTP 4 "entire tract"))	AWU/BCP	1156.50
Middle Bull Creek Unit (Kent Butler Ecological Reserve, Beard Trust)	AWU/BCP	996.71
Lower Bull Creek Unit (Jester, Forest Ridge, 3M, Hilltop, Gibson/Nott, Hiller, Kruger)	AWU/BCP	1090.98
Lime Creek (incl. 100 acres of Austin-Simon, Ltd.)	AWU/BCP	586.70
Parke West, Coldwater/Cowfork, Long Canyon, Vaught Ranch	AWU/BCP	1393.86
Cortaña	AWU/BCP	1751.95
Double J&T	AWU/BCP	1730.00
Reicher Ranch	AWU/BCP	819.74
Bohls Ranch	AWU/BCP	450.14
Bohls II	AWU/BCP	18.81
Sansom	AWU/BCP	13.00
Senna Hills	AWU/BCP	35.00
Schramm Ranch	AWU/BCP	100.63
Vireo Preserve	AWU/BCP	214.00
Ullrich Water Treatment Plant	AWU/BCP	18.00
Barton Creek Ventures	AWU/BCP	13.62
	AWU/BCP Subtotal	10,389.64
Bull Creek District Park, Bull Creek Greenbelt	PARD/BCP	129.48
St. Edward's Park	PARD/BCP	50.00
Barrow Preserve	PARD/BCP	8.00
Emma Long Metro Park	PARD/BCP	950.00
Commons Ford Park	PARD/BCP	115.00
Barton Creek Wilderness Area (Barton Creek Venture)	PARD/BCP	1075.24
Barton Creek Greenbelt	PARD/BCP	814.64
Friesenhahn	PARD/BCP	62
Mt. Bonnell	PARD/BCP	6
	PARD/BCP Dual-Managed Subtotal	3,210.36
	TOTAL ACREAGE	13,600.00

**PARD Operations does not manage for Endangered Species; they perform regular maintenance, i.e. mowing, trash pickup, and some trail management activities. AWU BCP staff provides BCP management activities.

Table 8. Monitoring and Management Activities of the City of Austin BCP Tracts within the Bull Creek Macrosite

Monitoring and Management Activities on the Balcones Canyonlands Preserve (City of Austin tracts)		Bull Creek macrosite																				
		upper Bull Creek unit									middle unit				lower Bull Creek unit							
		Bowman	Canyon Creek	Canyon Creek MUD tracts 1 to 3	Franklin	Gardens at Bull Creek	Gass	Hanks	Lanier	Sam Hamilton Memorial Reserve	Beard Trust	Kent Butler Ecological Resv	Jester Estates Cave Preserve	Barrow Preserve	Bull Cr. Greenblt.	Forest Ridge	Gibson/Nott	Hiller/Hilltop	Jester	Krueger	St. Edwards Park	3M
Monitoring Activities	mist-net, band, and spot-map golden-cheeked warblers									X		X				X					X	X
	search for banded golden-cheeked warblers	X	X	X	X			X	X	X		X				X		X	X	X	X	X
	spot-map black-capped vireos											X				X						
	karst faunal surveys			X								X	X									
	cave cricket exit counts			X								X	X			X						
	Jollyville Plateau salamander surveys & mark/recapture				X		X	X	X	X		X		X								
	bracted twistflower monitoring																					
	canyon mock-orange monitoring											X										
	vegetation monitoring											X										
	fuel moisture sampling of junipers																					
	white-tailed deer surveys																					
	monitoring of oak wilt	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Management Activities	deer control		X		X				X	X		X										
	feral hog control		X		X			X	X		X	X							X	X		X
	cowbird control			X						X			X									
	red imported fire ant control			X						X			X									
	restoration (planting native plants)				X	X				X		X				X						
	non-native plant control	X	X	X	X	X	X	X	X	X	X	X	X		X	X			X	X	X	X
	trash removal	X		X	X	X	X	X	X	X	X	X	X		X	X			X			
	patrol for evidence of trespass, vandalism, or dumping	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
	maintenance of roads, fences, signs	X	X	X	X	X	X	X	X	X	X	X	X			X			X	X	X	X
	inspect utility corridor maintenance			X	X	X	X	X	X	X	X		X		X	X			X		X	X

Table 9. City of Austin Monitoring and Management Activities on BCP Tracts within the Barton Creek, Cypress Creek, North Lake Austin, South Lake Austin and West Austin Macrosites

Monitoring and Management Activities on the Balcones Canyonlands Preserve (City of Austin tracts)		Barton Creek macrosite					Cypress Creek		North Lake Austin macrosite						South Lake Austin macrosite					West Austin macrosite		
		Barton Creek Wilderness	Barton Creek Greenbelt	Bohls II	Friesenhahn	Senna Hills	Austin-Simon	Lime Creek	Coldwater	Cortaña	Cowfork/Vaught	Emma Long	Long Canyon	Parke West	Bohls	Commons Ford	JJ&T/Sansom	Reicher Ranch	Schramm Ranch	Mount Bonnell	Ullrich	Vireo Preserve
Monitoring Activities	mist-net, band, and spot-map golden-cheeked warblers	X	X						X			X			X		X	X				X
	search for banded golden-cheeked warblers	X	X						X			X			X		X	X				X
	spot-map black-capped vireos									X												X
	karst faunal surveys	X	X					X		X				X							X	
	cave cricket exit counts	X	X					X		X				X							X	
	jollyville plateau salamander surveys																					
	bracted twistflower monitoring	X	X																	X	X	X
	canyon mock-orange monitoring																					
	vegetation monitoring									X					X	X			X			X
	fuel moisture sampling of junipers									X								X				
	white-tailed deer surveys																					
	monitoring of oak wilt	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Management Activities	deer control						X	X		X				X	X		X	X				
	feral hog control																					
	cowbird control																					
	red imported fire ant control	X						X		X				X								
	restoration (planting native plants)									X						X		X				X
	non-native plant control	X	X						X	X	X	X	X	X	X	X	X	X	X	X	X	X
	trash removal	X	X		X	X		X		X	X	X	X	X	X	X	X	X		X		X
	patrol for evidence of trespass, vandalism, or dumping	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	maintenance of roads, fences, signs	X	X	X		X	X	X	X	X	X		X	X	X		X	X	X			X

Other Notable Management Activities

In 2013, as a result of the loss of a permanent full-time biologist position in June 2012, BCP staff continued to rely heavily upon seasonal biologists and volunteers to accomplish basic monitoring and management tasks to meet permit obligations. Those tasks included, in particular, patrolling boundaries and reporting evidence of trespass, vandalism, fences in need of repair, etc. This position was posted in November 2013 and is expected to be filled in early 2014.

Rob Brooks was hired as the new BCP Ranger in May 2013. Rick Hudson was hired as the new Wildland Conservation Division (WCD) Facilities Supervisor in August 2013 and now oversees the WCD maintenance and ranger staff.

With assistance from Austin Police Department, staff conducted biannual aerial reconnaissance for oak wilt across the Preserve.

In addition, BCP staff conducted or coordinated the following:

BARTON CREEK MACROSITE

Barton Creek Wilderness Area and Greenbelt, and the Friesenhahn tract

- Continued, in October 2012, wildland/urban interface hazard assessment around boundary, begun in September.
- Found and mapped unauthorized camps, and, with Austin Police Department officers, evicted squatters.
- Assisted Parks and Recreation Dept. (PARC) staff with volunteer-organized invasive-plant removal events in October and February.
- A rule established by PARC managers, as a result of wildfire concerns raised by citizens, prohibits any activity that will result in more than minimal slash remaining on site on PARC-owned properties. This rule essentially stalled all significant invasive plant removal activities in the heavily-infested Barton Creek watershed. City staff, particularly in the Watershed Protection Department (WPD), is currently developing a new plan for slash mitigation, in coordination with Austin Fire Department.
- Gave permission for fungal inoculation of an elm trunk that fell onto the greenbelt trail, as a test of using fungal inoculations to accelerate decomposition of woody slash.
- Denied a request to place an "earthcache" at Backdoor Cave

- With the help of WPD staff, excavated and mapped a newly discovered cave, noting that it is relatively small, with not much potential for finding karst invertebrates.
- Discovered illegal clearing of native vegetation along the greenbelt trail; worked with PARD staff on a plan to educate the public on why this is not allowed.

Senna Hills

- Trimmed trees and brush encroaching upon, or at risk of falling on, a neighbor's fence.

BULL CREEK MACROSITE

Upper Bull Creek Unit

Bowman

- Concordia security/ trespass issues: met with Concordia security and biology staff as well as Travis County BCP staff to discuss recent trespass issues that originate from Concordia property.

Franklin

- Monitored water level at springs and salamander sites; due to drought conditions, most springs were dry by early September.
- WPD staff continued to monitor the ongoing Jollyville transmission line construction located directly under JP salamander habitat.

Hanks Tract and Gardens at Bull Creek

- Worked with WPD staff on maintenance issue of the sediment/flood control dam, including excavation of sediment and the removal of vegetation.
- Due to drought conditions, regularly monitored springs and spring runs to determine potential negative impacts to the Jollyville Plateau salamander.
- Restoration: planted walnuts in game-fenced area.
- Staff found a poacher on an ATV; this individual was actively using our hog trap and deer feeders and stands. Called police, and game warden, filed reports, and continue to monitor on the site.

Lanier

- WPD staff continued to monitor the ongoing Jollyville transmission line construction located directly under JP salamander habitat.

- City of Austin WPD staff added monitoring equipment to wells and springs.
- Monitored water level at Lanier spring. Due to drought conditions, the spring was dry by early June. WPD staff removed the weir when water levels and dissolved oxygen levels dropped, to make certain that salamanders were not prevented from retreating back to the spring outfall.
- Lanier House: discovered multiple break-ins, secured building, set up camera which then photographed individuals breaking into the building. Met with police, and periodically check on the site and camera. Worked on a demolition plan to remove this attractive nuisance.

Sam Hamilton Memorial Reserve West

- Led the annual night hike, focusing on the sounds at night.
- Conducted Golden-cheeked Warbler hikes in April and May.
- Volunteer project: seeded floodplain/ KR bluestem field with walnuts and red oak acorns.
- Planted bald cypress saplings along the stock pond.
- Planted 3600 shin oak acorns under dead and live Ashe junipers and in open areas as part of a germination/survival study. Acorns were planted with five volunteers on November 1, 8, and 14.
- WPD staff continued to monitor the ongoing Jollyville transmission line construction located directly under JP salamander habitat.

Middle Bull Creek Unit

Kent Butler Ecological Reserve

- Documented, by photographs from established points, changes in vegetation under transmission lines as a result of Black-capped Vireo habitat improvement, Oct. 2012 and July 2013.

Lower Bull Creek Unit

Forest Ridge

- Prepared and presented hikes for those requesting a permit to hike through the Bull Creek Preserve during Golden-cheeked Warbler breeding season.
- Coordinated two trail work volunteer days (February/ September): volunteers repaired the trail and erosion problems.

CYPRESS CREEK MACROSITE

Lime Creek/Austin Simon

- Cattle from a neighboring property wandered onto the tract through gaps in the old barbed-wire fence on the north boundary. Neighbor retrieved his cattle, and repaired the fence.
- Planned for construction of a game fence that will extend the length of the northern boundary. Construction is expected to begin in January 2014.

NORTH LAKE AUSTIN MACROSITE

Parke West/Coldwater/Cowfork/Long Canyon/Vaught Ranch

- Prep work for the installation of a new game fence along the Coldwater/City Park Road boundary and the Parke West/RM 2222 boundary. (Construction was initiated in December 2013.)
- Reported a damaged sewer line vent. Austin Water Utility line crew made necessary repairs.

Cortaña

- Devoted many hours to inspecting and discouraging trespass on an encroaching section of hiking trail constructed by River Place Municipal Utility District. Work involved patrolling the trail (with assistance from Travis County Department of Public Safety), mounting game cameras and reviewing film taken by them, and (with help from volunteers) constructing and re-constructing barricades. Barricades were repeatedly removed or bypassed, and the cameras eventually stolen.
- City staff worked with Gray & Associates, representing the River Place MUD, as they developed a plan to decommission the encroaching section of trail. The plan should be finalized, and implementation begun, late in 2013.
- Assisted Lower Colorado River Authority crews with alternative access to transmission lines for inspections. Normal access is prevented until an agreement can be reached to re-establish right of ingress/egress from southern gates to Big View Drive.
- Organized and directed a cleanup of debris and tall weeds with neighbors and volunteers along the boundary from Sun Tree Cove to Pelican Point.
- Several geo-caches were found in, and removed from, Panther Hollow, upstream of the River Place Nature Trail.

- Collected and planted seeds of woody, shrub-forming plants in expansion area south of existing shinnery.
- Found and reported a broken Austin Energy utility pole the on western boundary of the tract; AE crews shifted the line to a nearby intact pole.

Emma Long Park and Preserve

- Orion, a private consulting firm in Austin, conducted white-tailed deer surveys along City Park Road and provided the City of Austin BCP with the data.
- Inspected work done by Friends of Turkey Creek to re-route a segment of the Turkey Creek Trail and restore the old trail. Friends of Turkey Creek disbanded, and PARD completed FTC's responsibility for follow-up monitoring and reporting. AWU and PARD are covering the costs of the educational kiosk.
- Met with PARD staff and user groups of the Emma Long Motocross Park on September 2013 to discuss developing maps of authorized and unauthorized/unsustainable trails.
- Several illegal trails were cut at Emma Long between City Park Road and the eastern boundary, south of Oak Shores Drive. AWU and PARD BCP staffs continue to work on ways to discourage further activity. Volunteers are also patrolling the area.
- Conducted searches for the Largeflower/Giant Crested Coralroot (*Hexalectris grandiflora*) in May 2013 but were unable to relocate this rare orchid.
- AWU and PARD staffs continued to meet monthly to discuss conservation issues at Emma Long and Mt. Bonnell. Work is ongoing to install informational kiosks at the Emma Long Motocross Park and Turkey Creek Trail (installed July-August 2013), and educational signs along the trails.

SOUTH LAKE AUSTIN MACROSITE

BCP staff participated in the Westcave Christmas Bird Count, where the count circle includes this macrosite (Bohls Ranch, Reicher Ranch, and JJ&T).

Bohls

- Phase I of the WTCPUA wastewater treatment plant ended in June 2013. The second phase began shortly thereafter.

Commons Ford Ranch Park

- Ongoing prairie restoration project. Vegetation surveys and Project Prairie Bird surveys conducted by volunteers. Prescribed burn was conducted on August 9, 2013 with partners from AFD, FWS and TFS.
- Led guided bird hike.

Reicher Ranch

- Continued restoration of golden-cheeked warbler habitat on the grounds of the office headquarters and surrounding areas.
- Shaded fuel breaks were implemented in and around the compound facilities, along with the Bethany House. These were completed by Texas Forest Service with oversight from BCP staff to ensure best management practices were followed.
- Elevation grades were determined to begin erosion control efforts per the site plan for the Reicher Ranch office compound.

Schramm Ranch

- Sediment removal and subsequent restoration efforts were conducted in November 2012. The restoration areas continue to be monitored.

WEST AUSTIN MACROSITE

Mount Bonnell

- Rejected a plan by the West Point Society to rappel down the cliff face to remove trash, citing concerns over disturbance of twistflower habitat at the summit.
- Discussed with PARD staff plans for an ornamental iron fence, financed at least in part with AWU funds, to discourage trampling of bracted twistflowers at the summit.

Vireo Preserve

- Took photo points (established in October 2010) of habitat restoration areas in February 2013.

- Counted evergreen sumac seedlings in the mulch sock project in March 2013, and sampled all plant species in August 2013.
- Collected soil samples for routine analyses on Vireo Preserve and Wild Basin in October 2013.
- A core group of 6-12 volunteers assisted with habitat restoration, removal of invasive plants, trail work, erosion control, and patrols.
- As part of the hike and lecture series, gave a presentation and led a guided hike on the habitat restoration activities on the Vireo Preserve on October 19, 2013.
- On October 30, 2013, gave a presentation to the Capital Area Master Naturalists on the habitat restoration activities on the Vireo Preserve (“Creating Abundance in Endangered Species Habitat”).
- Hosted multiple school groups (Covington Middle School, Helping Hands, Eden Park) and American Youth Works to help with habitat restoration activities, including creating nesting guilds for the black-capped vireo.
- Planted several woody plants from the BCP greenhouse, including canyon mock-orange and little mulberry.
- Since Wild Basin/Vireo Preserve supports many of the habitat types observed throughout the BCP, is easily accessible, and offers the opportunity to partner with Travis County and St. Edwards University, it is an ideal site to experiment with habitat creation and restoration techniques. Lessons learned at this site should be applicable to other areas within the BCP. We are continuing adaptive management efforts initiated in 2011 to restore areas degraded by past land use by building soils, controlling erosion, and increasing diversity, with the goal of creating and enhancing endangered species habitat. Adaptive management includes using locally and commercially available materials (mulch, mulch socks, biochar, mycorrhizal fungi, soil amendments, native seed and plants) to help rebuild soils and promote regeneration of woody plants. Mulch is a common by-product of juniper-oak forest clearing and thus readily available for habitat restoration projects. Allowing mulch to age and “compost” contributes additional nutrients and micro-organisms. Biochar is a low-temperature charcoal produced from the biomass of wood and leafy plant materials, and is a commercially produced soil amendment that increases plant growth yields by contributing carbon and increasing mycorrhizal fungi activity. Other soil amendments used to date include organic fertilizers, composts, and/or mycorrhizal fungi inoculants.
- In conjunction with the habitat restoration work, St. Edwards University has been conducting three research projects: abundance, distribution, and diversity of ants in recently manipulated and non-manipulated areas, vegetation transects to

monitor changes over time, and soil metagenomics to determine how microbial populations (bacteria, fungi) change in response to soil amendments.

- The University of Texas at Austin is also conducting a study to assess populations of native and imported fire ants within open areas on the BCP, including the Vireo Preserve.

City of Austin 2013 BCP Outreach and Volunteer Program

The City's BCP outreach and volunteer programs had a banner year in Fiscal Year 2013 (October 2012-September 2013). A record number of volunteers hours recorded, educational events held and the creation of lasting video footage are just some of the successes from FY13. The City's BCP outreach program includes a variety of activities that provide citizens access to the BCP; opportunities to learn about the wildlife, flora and fauna; and options to volunteer to help manage, monitor and improve the BCP. Volunteers extend staff ability to complete essential job functions. In addition, volunteers act as ambassadors to the community by helping to lead volunteer activities; guiding interpretive hikes open to the public and by communicating with fellow citizens about their experience working with the BCP.

The BCP program benefitted from the efforts of **volunteers investing** an impressive **3717 hours** in many different types of projects. This number translates into the equivalent of almost two additional staff and provides a cost savings value over \$82,000. (volunteer value \$22.14/hr) This is an increase of almost 1700 hours from FY12.

Texas Parks and Wildlife Department created a video highlighting the life of the golden-cheeked warbler and the challenges facing the Balcones Canyonlands Preserve. This six minute video includes some of the first ever footage of a banded golden-cheeked warbler feeding young in a nest:

<http://www.youtube.com/watch?v=uuCRLT98pM8>.

The City of Austin's Channel 6 video about the golden-cheeked warbler banding program earned a first place award in the public education category from the Texas Association of Telecommunications Officers and Advisors. View the award winning video here: <http://www.youtube.com/watch?v=foGY78tvVjQ>.

FY14 marks the start of a pilot project with Austin Independent School District (AISD) to offer learning opportunities on BCP properties. AISD will provide

transportation free of charge to middle school classrooms participating in these unique learning opportunities. Before and after student evaluations will help determine the success of the program.

This year additional educational activities were offered to school groups, senior centers, recreation centers and Helping Hands Foster Home groups increasing the number of on-site BCP educational programs.

BCP worked closely with BCP neighbors to offer 16 guided hikes and one native plant give-away.

The BCCP Infrastructure Workshop in October 2012 had over 160 infrastructure providers attend. This was the first time field trips were offered, with 100% of the evaluations rating the field trips positively.

The City's BCP partnered with US Fish and Wildlife Services, Austin Fire Department, Watershed Protection, and the Texas Forest Service to offer a home ignition zone workshop for BCP neighbors and landscape professionals. BCP staff participated in 6 community events including the Long Canyon neighborhood Firewise celebration. BCP staff again partnered with the River Place neighborhood to offer a boundary clean-up along the Sun Tree Cove area in FY13.

Volunteers contributed over **600 hours** of personal time to monitor golden-cheeked warblers. This immense time commitment from volunteers helped improve the monitoring program.

Vickery Method volunteers spent almost a full day each week collecting GCWA data. Their service hours allowed BCP biologists to field check research methodology. In FY13 volunteers contributed 321 hours to this project.

BCP partnered with the City of Austin's Parks and Recreation Department to install two important kiosks at Emma Long Metropolitan Park. One is at the trailhead of the Turkey Creek Trail and focuses on the life of the golden-cheeked warbler. The second is at the trailhead to the Emma Long Motocross Park and focuses on the lifecycle of the golden-cheeked warbler, threats to the warbler and how motocross users can help reduce those threats.


BCP staff provided presentations to fellow professionals at the 2013 Warbler Symposium, KCI BCP Cave Inventory, and the International Association of Landscape Ecologists.

BCP partners are working to better coordinate outreach and volunteer activities. As a result of this additional coordination a combined partner summary is submitted to each of the BCCP committees on a quarterly basis. This report represents not only the work of the County and the City, but all BCP partners conducting education activities including Wild Basin, Travis Audubon Society and The Nature Conservancy. This combined effort shows the strength and reach of BCP partnerships. The summary report for January through September 2013 is included on the following page (Table 10).



Volunteers and Preserve staff preparing to remove invasive plants

Table 10. BCP Partners Education and Volunteer Activity Annual Summary




BALCONES CANYONLANDS PRESERVE

PARTNER EDUCATION ANNUAL SUMMARY

Contributing Partners include: TRAVIS County, City of Austin, Wild Basin St. Edwards University, The Nature Conservancy, Travis Audubon Society

JANUARY 2013-SEPTEMBER 2013



77 YOUTH EDUCATION EVENTS IN FY 13	
FY 13 YOUTH EDU PARTICIPANT TOTAL:	4199
34 GUIDED HIKE OFFERED IN FY13	
FY13 GUIDED HIKE PARTICIPANT TOTAL:	593
17 BCP HIKE AND LECTURE SERIES EVENTS OFFERED IN FY13	
FY13 HIKE AND LECTURE PARTICIPANT TOTAL:	220
36 SPECIAL TOURS, NEIGHBORHOOD PRESENTATIONS OR LARGER ACTIVITIES	
TOUR PARTICIPANT TOTAL:	772
VOLUNTEER ACTIVITIES	
VOLS. CONTRIBUTED OVER 6000 HOURS DURING FY13	A COST SAVINGS VALUE OF OVER \$137,000

TRAVIS COUNTY

At the close of FY13, Travis County managed a total of 7,641 acres of endangered bird habitat dedicated to the BCP. In addition, Travis County managed two cave tracts dedicated to the BCP with acreage not counted in this total. Travis County staff conducted a variety of resource monitoring and management activities on County-managed BCP lands in FY13 (Tables 11 and 12). The wildlife and plant management activities are described in more detail in Appendices H through L. Other notable management activities are further described in this section. Additionally, the annual report for Wild Basin Wilderness Preserve can be found in Appendix M. Wild Basin is owned by Travis County (164 acres) and St. Edwards University (63 acres) and is managed under contract by St. Edwards University.

Travis County had several staff changes this year. Natural Resources Program Manager Rose Farmer retired in March 2013. This position was filled in May 2013 by Wendy Connally. Natural Resources Patrol Technician, Ron Phillips, retired in January 2013 and the position was filled by Sally Wolfe in April 2013. A new Natural Resources Wildlife Technician position was approved this year and Erin Cord was hired in April 2013. Travis Clark served as the temporary Mickey Leland intern from April to June 2013.

Other Notable Management Activities

Fence, Road, and Building Construction and Maintenance

Constructing and maintaining boundary fences is an important aspect of Preserve management. In FY13, Travis County installed 120 linear feet of new boundary fence on the Canyon Vista tract. Minor fence repairs were conducted by staff on the Canyon Vista, Lucas, Lime Creek Unit, and Volente tracts. No major road projects that required contracted services occurred in FY13. Minor road repairs and vegetation trimming along roads was conducted on several tracts by Natural Resources staff and volunteers.

In FY13, an old shed at the Field Office headquarters on the Nootsie tract was demolished and a new metal maintenance building was erected on top of the original slab.

A cave gate was installed in Ireland's cave in March 2013.

BCP-related Activities and Issues with Outside Entities

In the summer and fall of 2012, BCP staff worked with River City Engineering and their subcontractors to facilitate the installation of a water line on the Lucas tract to service the new water treatment plant. Issues that were addressed included erosion control, tree protection, and removal and replacement of a portion of the boundary fence.

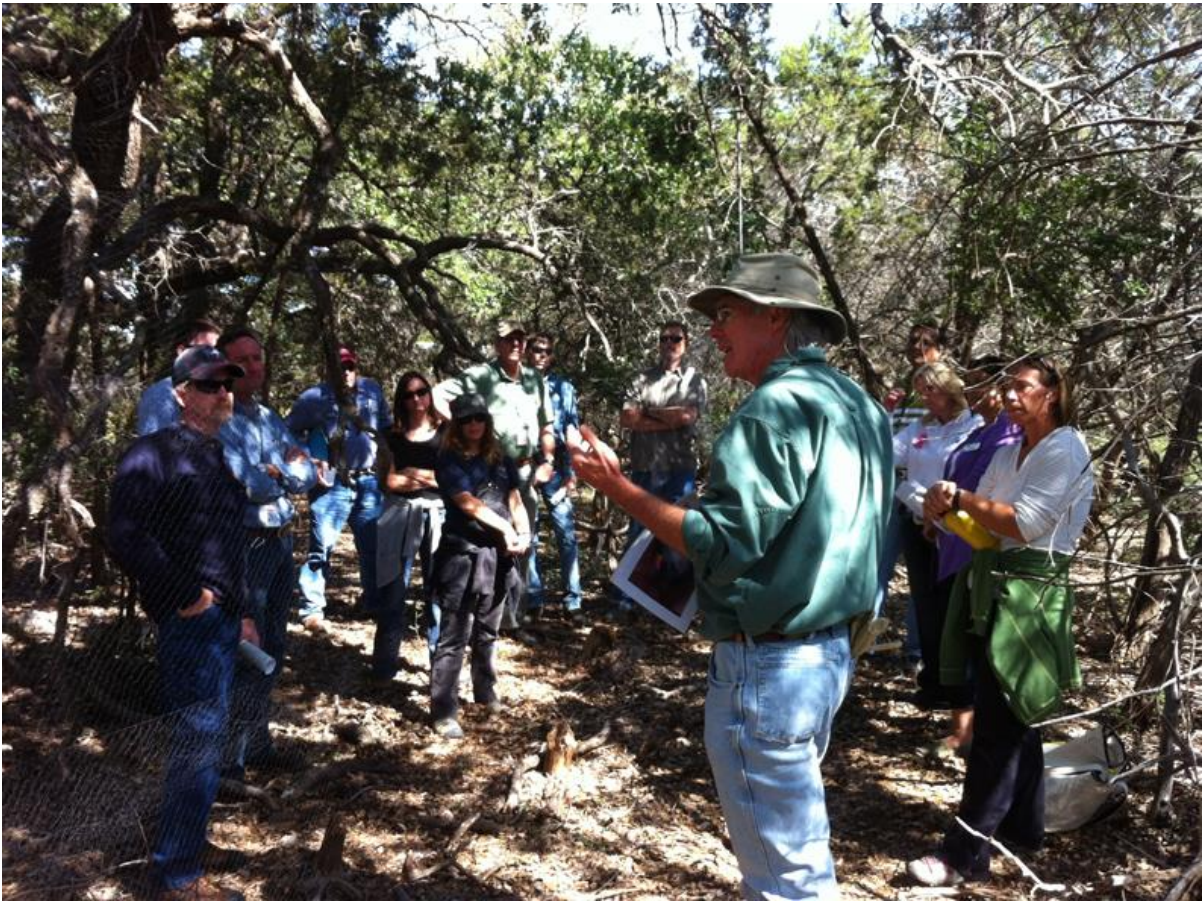
In February 2013, LCRA did some tree trimming under their utility lines on the Karnik, Sam Hamilton Memorial Reserve East, and Ribelin tracts.

Pedernales Electric Cooperative (PEC) conducted some emergency maintenance trimming along their transmission line on the Lake Perspectives tract in June 2013. They followed up by conducting some routine trimming along this same line in September 2013.

Staff continued to monitor ongoing effluent discharge problems at the Oak Shores Wastewater Treatment plant situated on the Greenshores Easement tract. This plant has a drip irrigation system located on the tract which has had persistent leaks for years due to inadequate maintenance of the lines. In FY12, TCEQ issued a Notice of Violation to PK/RE Development (owner of the plant) for failure to prevent an unauthorized discharge. NR staff continued to witness inadequate maintenance of lines and subsequent discharge and in November 2012, Travis County Environmental Quality enforcement staff initiated an investigation and issued two Notice of Violations to PK/RE Development. Several additional inspections occurred where violations were still documented but in a June 2013 inspection the plant and drain fields were functioning sufficiently. However, on subsequent visits in July and August 2013 problems were again observed. Natural Resources staff will continue to monitor the situation and work with law enforcement as needed.

In FY13, Travis County Natural Resources and Engineering staffs participated in meetings organized by Leander Independent School District (LISD) to discuss a proposed second access road to the Vandergrift High School and Four Points Middle School that, if approved, would be built on the BCP. LISD presented their proposal at the Fall Scientific Advisory, Citizens Advisory, and BCCP Coordinating Committee meetings but postponed filing for an infrastructure application until City, County, the Texas Department of Transportation (TxDOT) and LISD can review alternatives to the current proposal.

Travis County and City Natural Resources and Engineering staffs participated in technical workgroups to identify issues, scope information needs, and propose solutions for karst and aquifer protection, water quantity and quality, salamanders and invertebrate conservation, and stream protection related to the Texas 45 Southwest road project.



Golden-cheeked Warbler educational program at an infrastructure workshop

Table 11. FY13 Monitoring and Management Activities on Tracts Managed by Travis County within the Bull Creek, North Lake Austin, South Lake Austin, West Austin, and Pedernales River Macrosites and the Cave Tracts.

Monitoring and Management Activities on the Balcones Canyonlands Preserve (Travis County Tracts)		Bull Creek Macrosite							North Lake Austin Macrosite					South Lake Austin		Pedernales River	West Austin	Cave Tracts		
		Canyon Vista	Colina Vista	Concordia	Karnik/Richards/Wendland	Origer	Ribelin	Sam Hamilton East	Woody Hollow	Franzetti/Webb	Gray Mountain	Greenshores	Hereford	Steiner Ranch	Chandler	Medway	Hamilton Pool	Wild Basin	Ireland's	Stark's Mine
Monitoring Activities	spot-map golden-cheeked warblers (100-acre plots)	X					X									X	X			
	spot-map golden-cheeked warblers (non 100-acre plots)										X									
	spot-map black-capped vireos						X													
	presence/absence survey for black-capped vireos						X						X							
	karst surface monitoring	X		X			X											X	X	
	karst faunal surveys																	X	X	
	cave cricket exit counts																	X	X	
	Jollyville plateau salamander surveys			X				X												
	deer surveys															X				
Management Activities	deer control								X											
	feral hog control																			
	cowbird control															X				
	red imported fire ant control																			
	non-native plant control	X		X			X				X		X				X			
	black-capped vireo habitat restoration																			
	trash removal	X		X		X										X	X	X	X	
	patrol for evidence of trespass, vandalism, and dumping	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	fence maintenance or construction	X																		

Table 12. FY13 Monitoring and Management Activities on Tracts Managed by Travis County within the Cypress Creek Macrosite.

Monitoring and Management Activities on the Balcones Canyonlands Preserve (Travis County Tracts)		Cypress Creek Macrosite																	
		Bunten	Collins	Cuevas East	Cuevas West/TSNL	The Crossings	Grandview Hills North	Grandview Hills South	King/Atwood/Blake	Lake Perspectives	Lime Creek Unit	Lucas/ Lake Travis Bluffs	New Life	Nootsie	Romberg	Snowden	Spezia	Toops	Vireo Ridge/Stratton
Monitoring Activities	spot-map golden-cheeked warblers (100-acre plots)	X								X									X
	spot-map golden-cheeked warblers (non 100-acre plots)											X				X			X
	spot-map black-capped vireos						X												X
	presence/absence survey for black-capped vireos			X								X							X
	karst surface monitoring		X	X	X		X		X			X		X					X
	karst faunal surveys			X	X		X					X							X
	cave cricket exit counts			X	X							X							X
	Jollyville plateau salamander surveys	X					X						X						
	deer surveys				X		X	X						X					X
Management Activities	deer control				X		X		X	X		X	X	X		X			X
	feral hog control																		
	cowbird control													X				X	X
	red imported fire ant control			X	X							X							X
	non-native plant control	X										X		X		X			X
	black-capped vireo habitat restoration																		X
	trash removal	X		X	X		X				X		X	X		X			X
	patrol for evidence of trespass, vandalism, and dumping	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Fence maintenance or construction										X		X						X

Travis County Wildfire Preparedness

Travis County staff actively works both on the Preserve and within the community to reduce the risk of wildfire and to be prepared in the event of a wildfire. Travis County's BCP program is committed to 1) ensuring that public safety and firefighter safety are the first priority for all fire management activities; 2) continuing to work to protect property from wildfire; and 3) meeting its obligations to protect endangered species habitat from loss due to wildfire. The BCP is surrounded by neighborhoods and roads and some tracts have power lines running through them. These areas where man-made development abuts natural terrain and vegetation are known as wildland-urban interface. The goal of management within the wildland-urban interface is to reduce the probability of accidental ignition and escalation from surface to crown fire, thereby minimizing risk to habitat and adjacent structures. Some of the wildfire preparedness activities that Travis County Natural Resources staff participated in during FY13 included:

- BCP staff participated in City of Austin/Travis County Joint Wildfire Task Force meetings and Mitigation/Prevention sub-group meetings. This Task Force is an interagency group of fire and emergency management professionals who are planning Wildland/Urban Interface protections for the community. Travis County and City of Austin contracted with Bowman Consulting to develop a county-wide Community Wildfire Protection Plan (CWPP). A draft of the CWPP was submitted in September 2013 with the final to be completed by November 2013.
- BCP staff identified, assessed, and prioritized about 25 linear miles of interface along neighborhoods, infrastructure corridors, and roads that would benefit from fuel reduction efforts. Travis County is still waiting to hear if a Hazardous Fuel Mitigation Grant to the Federal Emergency Management Agency (FEMA), which was submitted in March 2012, will be awarded. If awarded, this grant will provide \$267,700 in funds (\$200,775 from grant, \$66,925 from County match) to reduce fuels within the wildland-urban interface.
- A standing dead tree removal project was completed on 14 acres of the Grandview Hills South tract in February 2013. The trees had died due to the drought and posed a potential fire risk because of their proximity to Wilson Parke Road.
- BCP staff worked with local neighborhoods on two workday projects to remove dead plant material on the BCP from behind neighborhood homes. One project occurred on the Canyon Vista tract in January 2013 and the second project

was at the Savannah Point neighborhood of Steiner Ranch in February 2013. Staff, neighbors, and volunteers participated in the workdays.

- Staff met with several of the neighboring homeowner associations along with Austin Fire Department and other Emergency Service District staff and discussed Firewise practices and provided Ready-Set-Go brochures.
- Five Natural Resources staff attended fire training courses during FY13. Courses taken include Introduction to Wildland Fire Behavior (Todd Bayless), Intermediate Wildland Fire Behavior (Renee Fields, Bill Simper, Sally Wolfe), and Operations in the Wildland-Urban Interface (Renee Fields).

Travis County Law Enforcement and Preserve Patrol

Management of BCP lands to meet the terms and conditions of the BCCP permit in a rapidly developing urban interface presents unique challenges for public agencies. Many BCP tracts are subject to law enforcement issues including illegal trespass (pedestrian, mountain bike, all-terrain vehicle, and motorcycle traffic), illegal dumping, vandalism, theft, poaching of native wildlife, illegal cutting of vegetation and unauthorized use of fire. Law enforcement on all Travis County owned or managed properties, including County Parks and County BCP tracts, are provided by Park Rangers. These Park Rangers work under the Travis County Parks Division and are commissioned Texas Peace Officers operating as Deputy Sheriffs under the Travis County Sheriff's Office (TCSO) and are certified by the Texas Department of State Health Services as Emergency Medical Technicians. The Park Rangers and Travis County's Natural Resources staff regularly patrol and inspect County managed BCP tracts to look for signs of illegal activity and to assess management needs. Regular patrols provide a visible County presence, thereby minimizing the incidence of unauthorized activities. Patrols also allow staff to inspect fences, locked gates, facilities, trails and roads, and look for resource management issues such as non-native plant and animal encroachment and signs of oak wilt infestation.

In FY13 there were 22 documented trespassing incidents on County managed BCP lands. Twelve of these incidents were the result of images taken from a trail camera installed at the Volente tract, an area which has experienced a high volume of trespassing. Park Rangers were made aware of the ongoing issues at Volente and set up a series of scheduled 'stakeouts' to better monitor the situation. Extra signage was installed and purple paint was applied in strategic locations to better clarify boundaries at Volente.

Six incidents of criminal mischief were documented (cut fences, knocked down signs, illegal fire ring, vandalism of structure). Three incidents of dumping were observed, one of which was a ski boat found at Volente. One incident of cultural artifact digging at the New Life tract was documented through several images of suspects photographed on trail cameras. One suspect was interviewed by Park Rangers and issued a criminal trespass warning due to his involvement. One incident of illegal marijuana cultivation on the Lucas tract resulted in the arrest of three suspects. Trail cameras were also utilized in their apprehension and are proving to be a valuable law enforcement tool.

Travis County BCP Volunteer and Outreach Programs

Travis County BCP benefited from the efforts of 308 volunteers who invested time into many different types of projects. Besides training, volunteers spent their time on the following projects: biological monitoring, wildlife management, non-native plant removal, vegetation surveys, maintenance, education and outreach, and data organization. The Volunteer Program has been effective at promoting education and outreach at the BCP; the program also reduces staff time and costs for BCP management. Volunteers provide valuable skills and time to Travis County. Overall, volunteers contributed 1,134 hours to assist Travis County at the BCP in FY13 (Table 13).

Table 13. Volunteer Hours Contributed to Travis County's BCP in FY13

Type of Activity	Number of Hours
Training	29
Bird Monitoring	206.5
Jollyville Plateau Salamander Monitoring	96
Karst Biological Surveys/Cricket Counts	41
Wildlife Management Activities	33
Non-native Plant Removal	111.5
Vegetation Surveys	97.5
Aquatic Water Quality Monitoring	30
Data Management	151
Public Education and Outreach	68
Maintenance	270.5
Total	1,134

Education and Outreach Activities

Travis County presented information about the BCP at hikes and tours, community meetings, public events, and training workshops. Approximately 1,083 individuals were reached through these efforts (Table 14).

Table 14. Travis County BCP Education and Outreach Summary for FY13.

Type of Activity	Total Events BCP	Total BCP Participants
Special Events	4	247
Children's Programs/Hikes	13	346
University Programs	6	154
Community Programs/Hikes	21	166
HOA/Neighbor Meetings	1	40
Hike/Lecture Series	3	61
Other Hikes/Tours	7	69
Total	55	1,083

Some of the Travis County BCP education and outreach highlights in FY2013 include:

- Natural Resources staff participated in and helped organize a number of special events this year including the 2012 BCCP Infrastructure Conference, an International Landscape Ecology Conference tour on the Jollyville Unit, and a Volunteer Appreciation Event.
- The FY13 BCP Hike and Lecture Series provided monthly guided hikes for the public to visit and learn about the preserve and management of the plants and animals that the BCP protects. Overall, Travis County planned eight different events throughout FY13. County staff led two interpretive hikes at Hamilton Pool, led a night hike at the Jollyville Unit, and held an educational hike and lecture covering Monarch Butterflies at the Jollyville Unit. Travis County also hosted a lecture covering snakes at Wild Basin Preserve as part of the Hike and Lecture Series and also coordinated one hike at the Barton Creek Habitat Preserve and two hikes at the Travis Audubon Baker Sanctuary.
- Natural Resources staff led seven other hikes or tours of the BCP to Preserve neighbors and other groups, such as Sun City, the 2013 Landscape Ecology Conference, the Travis Audubon Society, the Texas Cave Conservancy, Dell, Inc., and a University of Texas Environmental Law Class.
- Travis County reached out to area children this year by presenting two educational presentations during Summer Camps held at Alma de Mujer. Outreach programs were also given at Laurel Mountain and Walnut Creek elementary schools and

McNeil high school. Students learned about the endangered species found in the BCP as well as other local wildlife.

- Natural Resources staff led 19 neighborhood hikes throughout the year, educating hikers about all facets of the preserve. Hikes occurred at the Vista Point, Nootsie, Volente, Steiner Ranch, Grandview Hills, Snowden, Canyon Vista, and Vireo Ridge tracts.
- The BCP also served as a living classroom for university students from Concordia University and St. Edwards University. Travis County granted Educational Permits to several professors from these two universities which allowed them to take students onto the BCP for tours and to get experience in environmental monitoring (Table 15). Several hundred students had the opportunity to learn about the BCP and get field experience while taking these courses.

THE CITY OF LAKEWAY

Refer to Appendix N for a brief report for the City of Lakeway's management of Schramm Ranch.

LOWER COLORADO RIVER AUTHORITY

Management Highlights

Lower Colorado River Authority (LCRA) manages 2,707 acres as a portion of the preserve system. Management activities for the three LCRA preserves continued to focus on natural resource research and management, access management, and stewardship promotion.

Westcave

- Preserve staff hosted 9,778 students, teachers, and visitors from October 1, 2012 to September 30, 2013.
- Preserve staff conducted routine property monitoring and maintenance including fence repair and signage, and hazard tree removal.
- LCRA Environmental staff conducted presence/absence surveys of the entire property (including newly acquired areas that are not included in the BCP), according to USFWS protocol, for the endangered Golden-cheeked Warbler (GCWA) (*Setophaga chrysoparia*). LCRA staff logged 16 observations of GCWA during the spring 2013 survey effort.

McGregor

- Deer harvest activities were not conducted at McGregor during the 2012-2013 season. No deer or feral pigs were removed from the preserve this year.
- LCRA staff continued to work with the Comanche Trail Community Association (CTCA) to promote local support of land management, animal management, and stewardship efforts on the preserve. Permit renewal training was not held during this reporting period; however, during this reporting period, there were 14 permitted McGregor Good Neighbors. The active participation of the permittees continues to be an asset to preserve management. Individuals notify LCRA staff about trail conditions, access concerns, and general preserve status, as well as make suggestions for additional cooperative efforts between the CTCA and the LCRA.
- LCRA staff continued to conduct routine property surveys to identify and address maintenance needs and access issues. Activities included walking the preserve's perimeter, mending small sections of fence, and installing perimeter signs at strategic locations to discourage trespass.
- LCRA partnered with Travis County/COA to allow access for ongoing research being conducted by COA in partnership with The US Forest Service. The final report for the research is included in the City of Austin's 2013 avian ES report.

Wheless

- LCRA contracted the consulting firm Atkins North America (Atkins) to conduct territory level GCWA surveys on the 100-acre Prime Plot. During these surveys, Atkins staff logged 95 observations of adult male GCWA, 4 observations of adult female GCWA, and 2 observations of GCWA fledglings. Atkins staff estimates that approximately 14 territories are located within the Prime Plot.
- Deer harvest activities were not conducted at Wheless during the 2012-2013 season. The annual spotlight survey showed a deer density on the preserve of 1deer/ 18.3 acres. No deer or feral pigs were removed from the preserve this year.
- LCRA staff did not monitor invasive plants during this reporting period. Invasive plants will be documented as they are identified in the upcoming reporting period.
- LCRA staff continued to conduct routine property surveys to identify and address maintenance needs and access issues. Activities included walking the

preserve's perimeter, mending small sections of fence, and installing perimeter signs at strategic locations to discourage trespass.

- LCRA partnered with Travis County/COA to allow access for ongoing research being conducted by COA in partnership with The US Forest Service. The final report for the research is included in the City of Austin's 2013 avian ES report.

THE NATURE CONSERVANCY OF TEXAS

Science / Stewardship

Annual surveys (point count) were completed for the black-capped vireo (BCV) and golden-cheeked warblers (GCW) to determine population densities. February 28th marked the earliest recorded arrival of a GCW on the preserve. Texas A&M University conducted transects surveys in a study to determine the impact of expansion and construction of state highway 71 on the GCWs. A total of 213 GCW were found and 68 paired territories were monitored for nesting activity, fledglings were observed in 45 (66%) of those territories. One male BCV was observed on a single occasion. Brown-headed cowbirds were removed from the property with the use of a shotgun.

Preserve staff and TPWD public lands lottery hunters are helping to control the population of white-tailed deer in an effort to reduce browse and increase recruitment of Texas Oaks. Population is estimated through spot-light surveys, stand counts and camera surveys.

Austin Youth River Watch continues to monitor water quality in Barton Creek, the results have not found any anomalies.

No prescribed fires were completed on the preserve in 2013 due to burn bans. Four burn units totaling approximately 354 acres are ready to be completed during the upcoming winter season. Approximately one mile of fire line was treated for encroaching juniper to be used for prescribed fires and contingency for potential wildfire in the future.

Education/Outreach/Volunteers

The preserve hosted approximately 3355 visitors, 353 volunteers totaling 523 hours of work, and 238 used the property for educational purposes. Groups included the Boy Scouts of America, Ann Richards School for Young Women Leaders, Texas Parks and Wildlife, Balconies Canyonlands Preserve visitors, Austin Youth River Watch,

Audubon Society, the University of Texas, St. Edwards University, Texas A&M University, and the University of Missouri.

TEXAS CAVE MANAGEMENT ASSOCIATION

The Texas Cave Management Association (TCMA) manages two of the caves listed on the BCCP Permit (Lost Oasis Cave and Whirlpool Cave). Management activities on TCMA cave preserves for FY 2013 have been listed below:

Annual Report for Lost Oasis Cave Preserve Calendar Year 2013

Science / Stewardship

- Preserve Manager, Ryan Monjaras, made 6 solo trips to pick up trash and assess the gates and locks. The lock on the cave gate was changed to prevent unauthorized access by persons with old keys.
- Hunting was not nor will ever be conducted on the preserve.
- A complete management plan was prepared for the TCMA Board in 2011. This plan was reviewed and edited in FY12 for approval in FY 2013.
- For 2014, the only planned activities are to place property boundary signs, conduct a volunteer work day to pick up trash and cut brush, conduct cricket counts and control Red Imported Fire Ants, and update the existing Management Plan.

Education/Outreach/Volunteers

There were 10 recorded visits to Lost Oasis Preserve in 2013, with a total of 30 attendees. The cave was also visited by some TCMA Board members after the November Budget meeting in nearby Manchaca. We estimate 24 volunteer hours at a value of \$315.36.

The Austin Nature and Science Center continues to use the cave as an educational facility. Two trips were made by that group in 2013, with 14 attendees the first time and only 3 the second.

During the November TCMA Board visit, a great deal of steam was noted to emanate from numerous holes all around the cave gate, indicating a much greater volume of air than can be explained by the currently known passage. We hope someone will take this on as a dig project, perhaps the City of Austin cave team.

There are no reported expenses. The only income is from ANSC, and the amount is not available.

Annual Report for Whirlpool Cave Preserve Calendar Year 2013

Science / Stewardship

- There have been 3 faunal surveys held at the preserve. These were led by Mark Sanders and Todd Bayless. A yet-to-be-identified species of Pseudoscorpion was found, as well a few more species which had not been seen at Whirlpool before.
- Hunting was not nor will ever be conducted on the preserve.
- Although no prescribed fires have occurred on the preserve, the total parcel (3.6 acres) is ready to be burned if permitted by the City of Austin. This has been scheduled with the City, but looks like it will not occur for another 2yrs.
- Unfortunately, tawny crazy Ants have taken over the first three rooms of the cave and most of the surface lot. While currently in a low period following the big floods that occurred in October, they are assured to come back. We're going to start doing by-monthly cricket counts to try to monitor the impact of the ants on the cave.

Education/Outreach/Volunteers

In FY13, 1,037 individuals participated in trips through Whirlpool Cave, generally as far as the Travis County Room. These groups included school field trips (such as Austin Community College and the Girls School of Austin, Not Your Ordinary School), Austin Nature and Science Center camps, scout groups, Austin Fire Dept. rescue practice, and recreational cave groups.

TRAVIS AUDUBON SOCIETY

Travis Audubon Society owns and manages 680 acres at the Baker Sanctuary which are included as part of the BCP. A report of the monitoring and management activities conducted on the Bakers Sanctuary for FY13 is included as Appendix O.

LITERATURE CITED

- City of Austin and Travis County. 1995. *Interlocal Cooperation Agreement between Travis County and the City of Austin Implementing the Balcones Canyonlands Conservation Plan-Shared Vision*.
- U. S. Fish and Wildlife Service. 1996a. *Federal Fish and Wildlife Permit No. PRT-788841*.
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